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# Information and Communication Technologies for Development

Julian M. Bass, P. J. Wall

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*IFIP is the global non-profit federation of societies of ICT professionals that aims at achieving a worldwide professional and socially responsible development and application of information and communication technologies.*

IFIP is a non-profit-making organization, run almost solely by 2500 volunteers. It operates through a number of technical committees and working groups, which organize events and publications. IFIP's events range from large international open conferences to working conferences and local seminars.

The flagship event is the IFIP World Computer Congress, at which both invited and contributed papers are presented. Contributed papers are rigorously refereed and the rejection rate is high.

As with the Congress, participation in the open conferences is open to all and papers may be invited or submitted. Again, submitted papers are stringently refereed.

The working conferences are structured differently. They are usually run by a working group and attendance is generally smaller and occasionally by invitation only. Their purpose is to create an atmosphere conducive to innovation and development. Refereeing is also rigorous and papers are subjected to extensive group discussion.

Publications arising from IFIP events vary. The papers presented at the IFIP World Computer Congress and at open conferences are published as conference proceedings, while the results of the working conferences are often published as collections of selected and edited papers.

IFIP distinguishes three types of institutional membership: Country Representative Members, Members at Large, and Associate Members. The type of organization that can apply for membership is a wide variety and includes national or international societies of individual computer scientists/ICT professionals, associations or federations of such societies, government institutions/government related organizations, national or international research institutes or consortia, universities, academies of sciences, companies, national or international associations or federations of companies.


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Julian M. Bass · P. J. Wall (Eds.)

# Information and Communication Technologies for Development

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on Social Implications of Computers  
in Developing Countries, ICT4D 2020  
Manchester, UK, June 10–11, 2020  
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# Preface

This book presents the collection of papers selected for presentation at the International Federation for Information Processing (IFIP) Working Group 9.4 16th International Conference organized under the banner of the Third European Conference on the Social Implications of Computers in Developing Countries. The conference was hosted in Manchester, UK, by the University of Salford in June 2020.

Research papers published in this volume address ICT-related research challenges in Africa, Asia, and South America, including: Bangladesh, Brazil, Lebanon, Malawi, Myanmar, Nepal, Nigeria, Palestine, South Africa, and Rwanda. Despite being Convened as a European Conference, we were delighted to have facilitated such a global perspective on ICT4D.

We received 29 submissions which were each single-blind peer-reviewed by at least three members of the Program Committee. As a consequence of this process, 14 papers were accepted and selected for presentation at the conference. A further 4 papers were conditionally accepted, subject to refinement using more detailed feedback and advice from reviewers. 10 papers were given detailed feedback but not accepted. The authors of these papers have been encouraged to revise their papers for submission to the next global conference, to be held in Peru during 2021—now postponed to 2022. Sadly, one accepted paper was withdrawn by the authors.

## Online Conference

The conference was initially organized as a face-to-face event, to be hosted by the University of Salford at Media City UK in Greater Manchester. However, the COVID-19 pandemic resulted in the UK Government advice to “Stay at Home,” along with many countries imposing their own travel restrictions. Consequently, the University of Salford campus was closed and international travel prohibited. In order to facilitate dissemination of the research already submitted, we migrated to an online event.

One consequence of this was that we had to abandon the planned conference dinner in the Manchester United football ground at Old Trafford. Surprisingly perhaps, this sad turn of events did slightly gratify one group of delegates. The local fans of the nearby Manchester City football club were mildly comforted not to have to celebrate the conference dinner at the competing Manchester United ground!

Football rivalries aside and on a more positive note, we were able to retain the conference keynote speakers and workshops, albeit in abbreviated form. Also, the day before the IFIP WG 9.4 event the ICT4D North group of English Universities also held their annual workshop online.

## Previous Conferences

The IFIP WG 9.4 First European Workshop on Iterative and Incremental Approaches to ICT4D was held at Robert Gordon University in Aberdeen, UK, in May 2014. The keynote speaker at that workshop was Eswaran Subrahmanian from Carnegie Mellon University, USA.

The second European conference was held in Tirana, Albania, in June 2018, and was organized by IFIP WG 9.4, the UNESCO chair in ICT4D at Royal Holloway, University of London, UK, the European University of Tirana, Albania, and the University of Tirana, Albania.

The IFIP WG 9.4's global conference series has been running for more than 20 years. With the 15th International Conference on Social Implications of Computers in Developing Countries held in Dar es Salaam, Tanzania, in May 2019.

## Keynote Speakers

Despite the condensed online format adopted for the third European conference, we were pleased to welcome keynote speakers: Dr. Ciara Heavin, University College Cork, Ireland, and Terrance Fernando, University of Salford, UK.

Dr. Heavin's keynote talk focused on her work on the IMPACT project in Nigeria between 2016–2018. The key findings from the project included identification of isolated rural social agencies that limited the authority and value of centralized initiatives including public health based initiatives. A further important finding indicated that trained healthcare professionals were scarce and that the public health system relied on distributed and informal communities of practice. She emphasized that this meant existing material agencies of rural healthcare centres were not sufficient for deep enactment of agreed healthcare delivery guidelines.

Prof. Fernando spoke on "Technology Enhanced Adaptive Governance for Building Resilient Cities: Barriers and Challenges." His talk drew on the experience of projects that had attracted over GBP £7M over a five year period in areas of disaster response management, disaster risk reduction, and risk sensitive urban design. Drawing on his experience of working in Sri Lanka, Pakistan, and Malaysia, he emphasized the importance of developing a culture of collaboration among stakeholders and building sustainable teams to overcome political instability.

## Panels

The first panel addressed "Philosophical Approaches to ICT4D" and was chaired by Dr. Dympna O'Sullivan (Technical University Dublin, Ireland). The panelists were Prof. Sundeep Sahay (University of Oslo, Norway), Dr. David Kreps (University of Salford, UK), and Prof. Silvia Masiero (now with the University of Oslo, Norway).

This panel discussion critically examined the changing ICT4D landscape from a variety of ontological, philosophical, and methodological perspectives. The discussion spanned a variety of topics including the dominance of positivist and interpretivist approaches in the field, the establishment and rapid growth of the HISP project, and the current move towards more critical realist, Southern-based and other indigenous and regional research paradigms and theories. It was strongly argued that such changed methods and philosophical approaches are necessary in order to address the changing nature of the ICT4D field resulting from increasing use of AI and advanced technologies in the Global South and the growing importance of ethical considerations in this work. It was also agreed that we are witnessing the emergence of a new ICT4D 3.0 digital for development paradigm and new approaches are needed to address this.

Prof. Robert Davison, City University of Hong Kong, Hong Kong, and Dr. Pamela Abbott, The University of Sheffield, UK, facilitated the second workshop on “Academic Publishing for Early Career Researchers.” The workshop focused on capacity building for researchers from the Global South, to support them in gaining access to high-quality journals for their ICT4D research.

October 2020

Julian M. Bass  
P. J. Wall



# Acknowledgements

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We also appreciate the support of Prof. Robert Davison who is chair of the IFIP 9.4 WG and Editor-in-chief of the *Electronic Journal of Information Systems in Developing Countries*. Also, David Kreps, chair of the IFIP Technical Committee 9 on Humans and Computers. Both, not only enabled and supported the event within IFIP, but we were delighted that they attended and contributed to the conference.

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